AMENDMENTS

IN THE CLAIMS

Please amend claims 1-3, 9-11, 16, 19, 21, 22 and 28 and add new claims 48 and 49 as shown below. Please cancel claims 6-8 and 39-45 without prejudice.

1. (Presently amended) A method for increasing endogenous gamma globin (γ-globin) in a subject, the method comprising administering to the subject ~~an agent~~ hypoxia-inducible factor (HIF) prolyl hydroxylase inhibitor which increases expression of the gene encoding γ-globin.

2. (Presently amended) The method of claim 1, wherein the ~~agent~~ HIF prolyl hydroxylase inhibitor increases expression of the gene encoding γ-globin by increasing the stability or activity of an alpha subunit of hypoxia inducible factor (HIFα).

3. (Presently amended) The method of claim 2, wherein the ~~agent~~ HIF prolyl hydroxylase inhibitor increases stability or activity of HIFα by inhibiting hydroxylation of HIFα.

4. (Originally presented) The method of claim 2, wherein HIFα is selected from the group consisting of HIF-1α, HIF-2α, HIF-3α, and any fragment thereof.

5. (Originally presented) The method of claim 2, wherein HIFα is endogenous to the subject.

6-8. (Presently canceled)

9. (Presently amended) The method of claim 1~~8~~, wherein the HIF ~~hydroxylase enzyme is~~prolyl hydroxylase inhibitor inhibits a HIF prolyl hydroxylase selected from the group consisting of EGLN1, EGLN2, EGLN3, ~~FIH-1,~~ and any subunit or fragment thereof.

10. (Presently amended) A method for increasing the level of fetal hemoglobin in a subject, the method comprising administering to the subject ~~an agent~~ HIF prolyl hydroxylase inhibitor which increases expression of the gene encoding γ-globin.

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11. (Presently amended) A method for treating a disorder associated with abnormal hemoglobin in a subject, the method comprising administering to the subject a hypoxia-inducible factor (HIF) prolyl hydroxylase inhibitor which increases expression of the gene encoding γ-globin, thereby increasing the level of fetal hemoglobin in the subject.

12. (Originally presented) The method of claim 11, wherein abnormal hemoglobin comprises an alteration in the level, structural integrity, or activity of adult β-globin.

13. (Originally presented) The method of claim 11, wherein the disorder is selected from the group consisting of β thalassemias and sickle cell syndromes.

14. (Originally presented) The method of claim 13, wherein the β-thalassemia is selected from β^0- and β^+-thalassemia.

15. (Originally presented) The method of claim 13, wherein the sickle cell syndrome is selected from sickle trait, sickle β thalassemia, and sickle cell anemia.

16. (Presently amended) A method for increasing the proportion of fetal hemoglobin relative to non-fetal hemoglobin produced by a cell or population of cells, the method comprising administering to the cell or population of cells ~~an agent~~ hypoxia-inducible factor (HIF) prolyl hydroxylase inhibitor which increases expression of the gene encoding γ-globin.

17. (Withdrawn) A method for treating or pretreating a subject infected with or at risk for being infected with a species of Plasmodium, the method comprising increasing fetal hemoglobin level in the subject.

18. (Withdrawn) The method of claim 17, wherein the species of Plasmodium is *Plasmodium falciparum*.

19. (Presently amended) The method of claim 11, wherein the ~~agent~~ HIF prolyl hydroxylase inhibitor is administered in combination with a second therapeutic agent.

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20. (Originally presented) The method of claim 19, wherein the second therapeutic agent is selected from the group consisting of hydroxyurea, butyrate analogs, and 5-azacytidine.

21. (Presently amended) The method of claim 1, wherein the ~~agent~~HIF prolyl hydroxylase inhibitor is administered *in vivo*.

22. (Presently amended) The method of claim 1, wherein the ~~agent~~ HIF prolyl hydroxylase inhibitor is administered *ex vivo*.

23. (Originally presented) The method of claim 1, wherein the subject is a primate.

24. (Originally presented) The method of claim 1, wherein the subject is a human.

25. (Originally presented) The method of claim 1, wherein the subject is a cell.

26. (Originally presented) The method of claim 25, wherein the cell is derived from bone marrow.

27. (Originally presented) The method of claim 25, wherein the cell is selected from the group consisting of hematopoietic stem cells and blast-forming unit erythroid (BFU-E) cells.

28. (Presently amended) A method for increasing the level of fetal hemoglobin in a subject, the method comprising:

(a) administering to a population of cells ~~an agent~~ hypoxia-inducible factor (HIF) prolyl hydroxylase inhibitor which increases expression of the gene encoding γ-globin; and

(b) transfusing the γ-globin expressing cells into the subject.

29. (Originally presented) The method of claim 28, wherein the subject has a disorder associated with abnormal hemoglobin.

30. (Originally presented) The method of claim 29, wherein abnormal hemoglobin comprises an alteration in the level, structural integrity, or activity of adult β-globin.

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31. (Originally presented) The method of claim 29, wherein the disorder is selected from the group consisting of β thalassemias and sickle cell syndromes.

32. (Originally presented) The method of claim 31, wherein the β-thalassemia is selected from β^0- and β^+-thalassemia.

33. (Originally presented) The method of claim 31, wherein the sickle cell syndrome is selected from sickle trait, sickle β thalassemia, and sickle cell anemia.

34. (Withdrawn) The method of claim 28, wherein the subject is infected with a species of Plasmodium.

35. (Withdrawn) The method of claim 34, wherein the species of Plasmodium is *Plasmodium falciparum*.

36. (Originally presented) The method of claim 28, wherein the cells are selected from the group consisting of hematopoietic stem cells, blast-forming unit erythroid (BFU-E) cells, and bone marrow cells.

37. (Withdrawn) A medicament comprising an agent which increases expression of the gene encoding γ-globin for use in increasing fetal hemoglobin level in a subject.

38. (Withdrawn) The medicament of claim 37, wherein the agent increases expression of the gene encoding γ-globin by increasing the stability or activity of HIFα.

39-45. (Canceled herein)

46. (Withdrawn) The medicament of claim 37, wherein the medicament additionally comprises a second therapeutic agent.

47. (Withdrawn) The medicament of claim 46, wherein the second therapeutic agent is selected from the group consisting of hydroxyurea, butyrate analogs, and 5-azacytidine.

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48. (Newly added) The method of claim 1, wherein the HIF prolyl hydroxylase inhibitor is selected from the group consisting of an iron chelator, a 2-oxoglutarate mimetic, and a proline analog.

49. (Newly added) The method of claim 48, wherein the 2-oxoglutarate mimetic inhibits HIF prolyl hydroxylase competitively with respect to 2-oxoglutarate and noncompetitively with respect to iron.

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